

CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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SUBJECT	Gornicza Electrotechnic Plant: Production of an Electromagnetic- Wave Range Finder	DATE DISTR.	17 June 1955
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THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
(FOR KEY SEE REVERSE)

General

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1. The Military Institute of Scientific Research in Warsaw, 6 ul. Oleandrow, Section VII B, has developed a range finder based on the principle of emitting very short waves with a retarded (sic) receiver. This new range finder is to be used in the field when optical range finders cannot be used, for example at night and in foggy weather. Experiments with this device were made for three months in the laboratories of the institute; they were so successful that it was possible to begin mass production in January 1950.
2. The order was given to the Stalinogrod E XIV-P electrotechnic plant in Gornicza (a suburb of Grabocin-Q51/Y77), where the devices are being manufactured in a special section housed on the third floor of the plant. The section employs 145 workers.
3. Weekly production amounts to six range finders and eight portable radar sets. The entire output at present is being shipped to the USSR, but, reportedly, part of the 1955 output is to be reserved for Poland.

Description of the Device

4. The range finder has two adjacent reflector-type antennas, the radiation axes of which are parallel. One antenna sends and the other receives the waves emitted by the apparatus.
5. From the circuit of series-connected induction coils, the current goes into the impulse-generator on one side and into the oscillograph with luminous screen on the other, similar to the cathode-ray tube. From the impulse-generator, the current passes through the transmitter and reaches the transmitting antenna.
6. The electromagnetic waves reflected by the target return to the receiving antenna and

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are amplified in the receiver and on the luminous screen of the oscillograph, which is equipped with a scale on which the distance to the target is registered.

7. Figure 2 on the scale indicates the beginning of the scale itself; Figure 3 indicates the individual impulses; Figure 4 indicates the impulse reflected by the target. This latter figure indicates with considerable accuracy the distance between the target and the range finder.
8. The circuit is composed as follows: The two polar conductors are connected to condensers which are coupled in parallel series. Induction coils, which can be disconnected, are inserted parallel to these condensers.
9. A permanent impedance coil is inserted at the end of the power circuit; the current reaches the oscillograph through this coil.
10. The entire apparatus weighs about 14 kilograms and can be transported in a car or on a motorcycle.. The necessary power (direct current) is supplied by a storage battery.

Production Plan

11. In 1955, production reportedly is to be increased to at least 30 range finders weekly. The instruments are to be issued as follows: one to every two companies of each regiment; one to every artillery battery; and one to every heavy tank.

Legend to Sketch No. 1.

1. Luminous screen
2. Beginning of dial
3. Impulses
4. Reflected target
5. Impulse-generator
6. Transmitter
7. Transmitting antenna
8. Oscillograph
9. Circuit
10. Induction coils
11. Condensers
12. Receiver
13. Receiving antenna
14. A-Impedance
15. Clamps
16. Reflected

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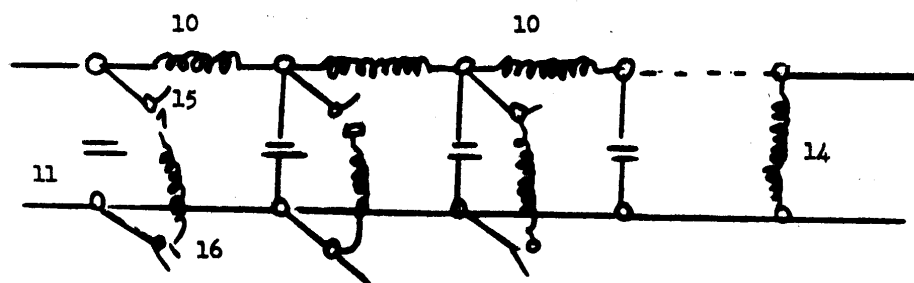
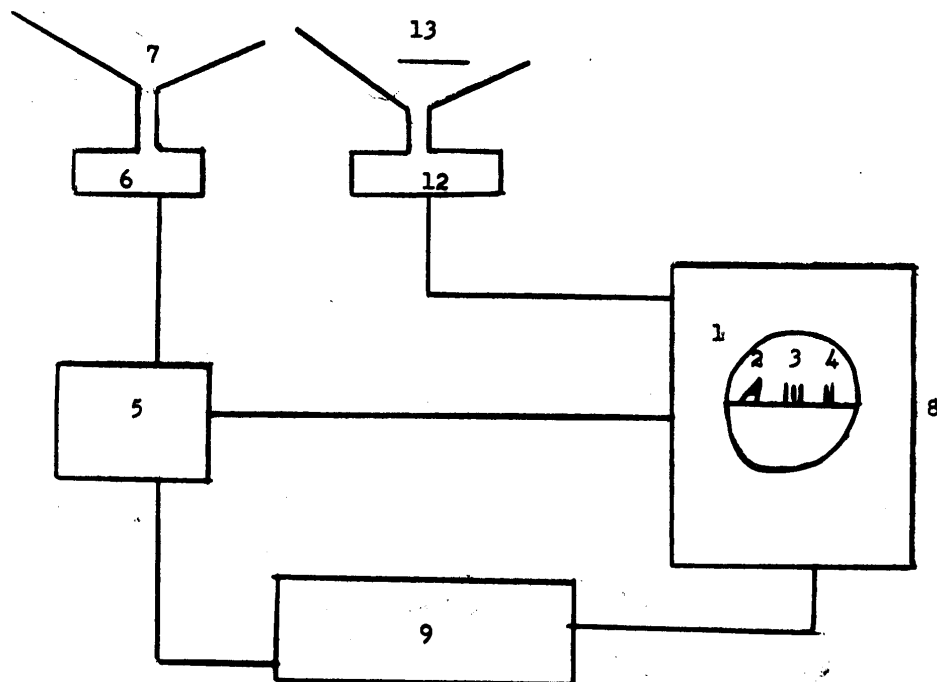
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Sketch No. 1.

Range Finder



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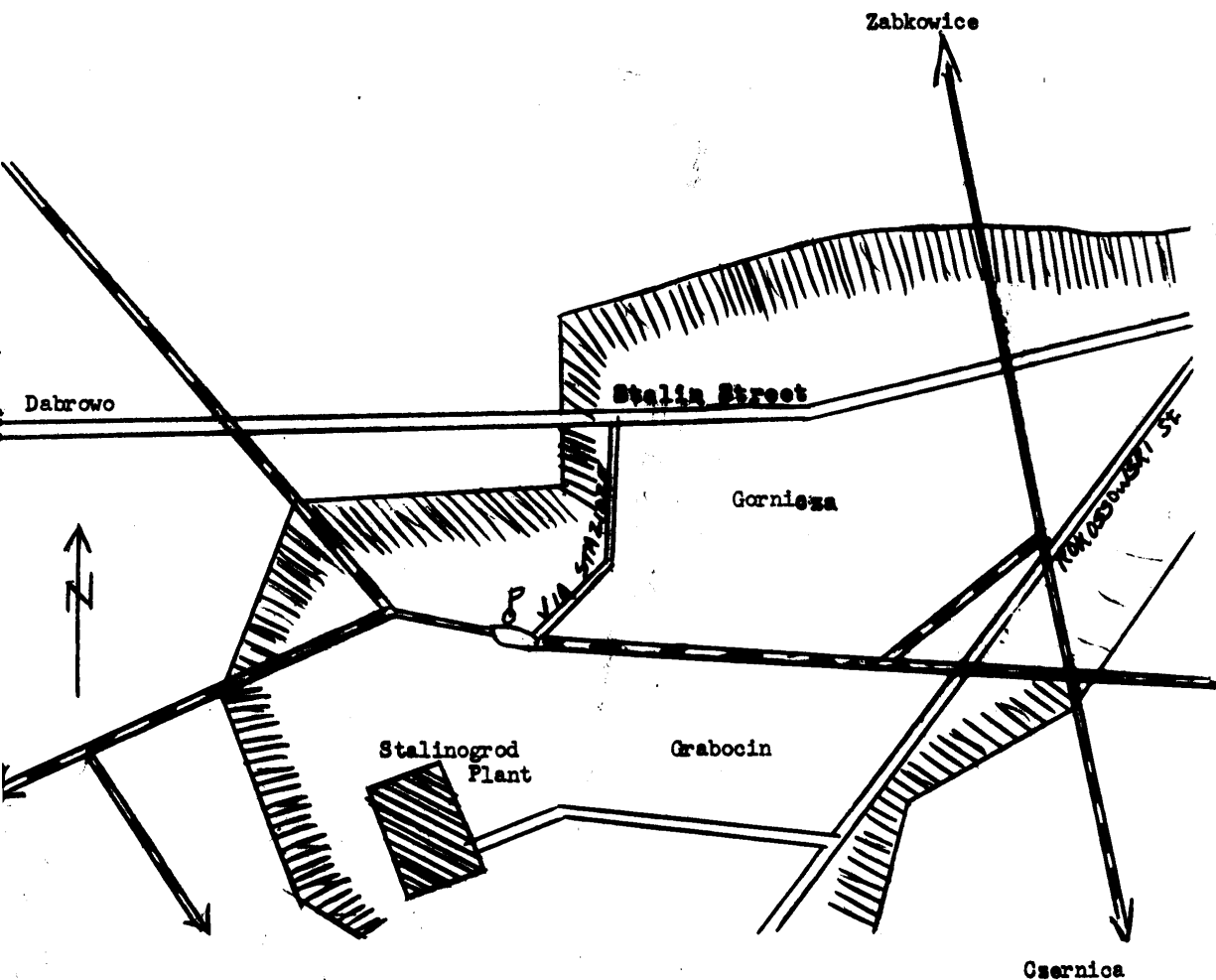
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Sketch No. 2.

Stalinograd Plant, Gornicza



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